RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/647,519A

Source: I FWI6

Date Processed by STIC: 12-28-04

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IFW16

RAW SEQUENCE LISTING   DATE: 12/28/2004
PATENT APPLICATION: **US/10/647,519A**   TIME: 09:46:15

Input Set : **A:\269.revseqlist.txt**
Output Set: **N:\CRF4\12282004\J647519A.raw**

```
 3 <110> APPLICANT: Fainzilber, Michael M.
 4        Kits, Karel S.
 5        Burlingame, Alma L.
 6        Olivera, Baldomero M.
 7        Walker, Craig
 8        Watkins, Maren
 9        Shetty, Reshma
10        Cruz, Lourdes J.
11        Imperial, Julita
12        Colledge, Clark
13        University of Utah Resarch Foundation
14        Vrije Universiteit
15        Regents of the University of California
17 <120> TITLE OF INVENTION: Gamma-Conopeptides
19 <130> FILE REFERENCE: 2314-269
21 <140> CURRENT APPLICATION NUMBER: US 10/647,519A
22 <141> CURRENT FILING DATE: 2003-08-26
24 <150> PRIOR APPLICATION NUMBER: US 09/210,952
25 <151> PRIOR FILING DATE: 1998-12-15
27 <150> PRIOR APPLICATION NUMBER: US 60/069,706
28 <151> PRIOR FILING DATE: 1997-12-16
30 <160> NUMBER OF SEQ ID NOS: 47
32 <170> SOFTWARE: PatentIn Ver. 2.0
34 <210> SEQ ID NO: 1
35 <211> LENGTH: 42
36 <212> TYPE: PRT
37 <213> ORGANISM: Artificial Sequence
39 <220> FEATURE:
40 <223> OTHER INFORMATION: Description of Artificial Sequence: generic formula
41        of gamma-conopeptides
43 <220> FEATURE:
44 <221> NAME/KEY: PEPTIDE
45 <222> LOCATION: (1)..(13)
46 <223> OTHER INFORMATION: Xaa at residues 1, 2, 3, 4, 5, and 6 may be
47        des-Xaa or any amino acid; Xaa at residues 8, 9,
48        10, 11 and 12 may be any amino acid; Xaa at
49        residue 13 may be des-Xaa or any amino acid.
51 <220> FEATURE:
52 <221> NAME/KEY: PEPTIDE
53 <222> LOCATION: (15)..(19)
54 <223> OTHER INFORMATION: Xaa at residues 15, 16, 17 and 18 may be any amino
55        acid; Xaa at residue 19 is Glu,
56        gamma-carboxyglutamate or Gln.
```

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```
 58 <220> FEATURE:
 59 <221> NAME/KEY: PEPTIDE
 60 <222> LOCATION: (22)..(28)
 61 <223> OTHER INFORMATION: Xaa at residues 22, 23 and 24 may be any amino
 62       acid; Xaa at residue 25 may be des-Xaa or any
 63       amino acid; Xaa at residues 27, 28 and 29 may be
 64       any amino acid.
 66 <220> FEATURE:
 67 <221> NAME/KEY: PEPTIDE
 68 <222> LOCATION: (30)..(42)
 69 <223> OTHER INFORMATION: Xaa at residues 30, 31 and 32 may be des-Xaa or
 70       any amino acid; Xaa at residues 34, 35, 36, 37,
 71       38, 39, 40, 41 and 42 may be des-Xaa or any amino
 72       acid.
 74 <400> SEQUENCE: 1
W--> 75 Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa
 76   1               5                  10                  15
 78 Xaa Xaa Xaa Cys Cys Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa
 79           20                  25                  30
 81 Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
 82           35                  40
 85 <210> SEQ ID NO: 2
 86 <211> LENGTH: 42
 87 <212> TYPE: PRT
 88 <213> ORGANISM: Artificial Sequence
 90 <220> FEATURE:
 91 <223> OTHER INFORMATION: Description of Artificial Sequence: generic
 92       sequence of gamma-conopeptides.
 94 <220> FEATURE:
 95 <221> NAME/KEY: PEPTIDE
 96 <222> LOCATION: (1)..(13)
 97 <223> OTHER INFORMATION: Xaa at residues 1, 2, 3, 4, 5 and 6 may be des-Xaa
 98       or any amino acid; Xaa at residues 8, 9, 10, 11
 99       and 12 may be any amino acid; Xaa at residue 13
100       may be des-Xaa or any amino acid.
102 <220> FEATURE:
103 <221> NAME/KEY: PEPTIDE
104 <222> LOCATION: (15)..(22)
105 <223> OTHER INFORMATION: Xaa at residues 15, 16, 17 and 18 may be any amino
106       acid; Xaa at residue 19 is Glu,
107       gamma-carboxyglutamate or Gln; Xaa at residue 22
108       is Ser or Thr.
110 <220> FEATURE:
111 <221> NAME/KEY: PEPTIDE
112 <222> LOCATION: (23)..(29)
113 <223> OTHER INFORMATION: Xaa at residues 23 and 24 may be any amino acid;
114       Xaa at residue 25 may be des-Xaa or any amino
115       acid; Xaa at residues 27, 28 and 29 may be any
116       amino acid.
```

```
118 <220> FEATURE:
119 <221> NAME/KEY: PEPTIDE
120 <222> LOCATION: (30)..(42)
121 <223> OTHER INFORMATION: Xaa at residues 30, 31 and 32 may be des-Xaa or
122      any amino acid; Xaa at residues 34, 35, 36, 37,
123      38, 39, 40, 41 and 42 may be des-Xaa or any amino
124      acid.
126 <400> SEQUENCE: 2
```

W--> **127 Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa**

```
128   1                 5                 10                15
130 Xaa Xaa Xaa Cys Cys Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa
131             20                25                30
133 Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
134         35                40
137 <210> SEQ ID NO: 3
138 <211> LENGTH: 39
139 <212> TYPE: PRT
140 <213> ORGANISM: Artificial Sequence
142 <220> FEATURE:
143 <223> OTHER INFORMATION: Description of Artificial Sequence: generic formula
144      of gamma-conopeptides
146 <220> FEATURE:
147 <221> NAME/KEY: PEPTIDE
148 <222> LOCATION: (1)..(13)
149 <223> OTHER INFORMATION: Xaa at residue 1 is any amino acid; Xaa at
150      residues 2, 3, 4, 5 and 6 may be des-Xaa or any
151      amino acid; Xaa at residues 8, 9, 10, 11, 12 and
152      13 may be any amino acid.
154 <220> FEATURE:
155 <221> NAME/KEY: PEPTIDE
156 <222> LOCATION: (27)..(39)
157 <223> OTHER INFORMATION: Xaa at residues 27, 28, 29, 31, 32, 33, 34, 35, 36
158      and 37 may be any amino acid; Xaa at residues 38
159      and 39 may be des-Xaa or any amino acid.
161 <220> FEATURE:
162 <221> NAME/KEY: PEPTIDE
163 <222> LOCATION: (15)..(19)
164 <223> OTHER INFORMATION: Xaa at residues 15, 16, 17 and 18 may be any amino
165      acid; Xaa at residue 19 is Glu or
166      gamma-carboxyglutamate.
168 <400> SEQUENCE: 3
```

W--> **169 Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa**

```
170   1                 5                 10                15
172 Xaa Xaa Xaa Cys Cys Ser Asn Ser Cys Asp Xaa Xaa Xaa Cys Xaa Xaa
173             20                25                30
175 Xaa Xaa Xaa Xaa Xaa Xaa Xaa
176         35
179 <210> SEQ ID NO: 4
180 <211> LENGTH: 39
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RAW SEQUENCE LISTING   DATE: 12/28/2004
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Input Set : **A:\269.revseqlist.txt**
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181 <212> TYPE: PRT
182 <213> ORGANISM: Artificial Sequence
184 <220> FEATURE:
185 <223> OTHER INFORMATION: Description of Artificial Sequence: generic
186        sequence of gamma-conopeptides.
188 <220> FEATURE:
189 <221> NAME/KEY: PEPTIDE
190 <222> LOCATION: (1)..(13)
191 <223> OTHER INFORMATION: Xaa at residue 1 is any amino acid; Xaa at
192        residues 2, 3, 4, 5 and 6 may be des-Xaa or any
193        amino acid; Xaa at residues 8, 9, 10, 11, 12 and
194        13 may be any amino acid.
196 <220> FEATURE:
197 <221> NAME/KEY: PEPTIDE
198 <222> LOCATION: (15)..(19)
199 <223> OTHER INFORMATION: Xaa at residue 15 is Ser or Thr; Xaa at residues
200        16, 17 and 18 may be any amino acid; Xaa at
201        residue 19 is Glu or gamma-carboxyglutamate.
203 <220> FEATURE:
204 <221> NAME/KEY: PEPTIDE
205 <222> LOCATION: (27)..(39)
206 <223> OTHER INFORMATION: Xaa at residues 27, 28, 29, 31, 32, 33, 34, 35, 36
207        and 37 may be any amino acid; Xaa at residues 38
208        and 39 may be des-Xaa or any amino acid.
210 <400> SEQUENCE: 4
```

W--> **211 Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa**

```
212   1               5                   10                  15
214 Xaa Xaa Xaa Cys Cys Ser Asn Ser Cys Asp Xaa Xaa Xaa Cys Xaa Xaa
215             20                  25                  30
217 Xaa Xaa Xaa Xaa Xaa Xaa Xaa
218          35
221 <210> SEQ ID NO: 5
222 <211> LENGTH: 34
223 <212> TYPE: PRT
224 <213> ORGANISM: Artificial Sequence
226 <220> FEATURE:
227 <223> OTHER INFORMATION: Description of Artificial Sequence: generic
228        sequence of gamma-conopeptides.
230 <220> FEATURE:
231 <221> NAME/KEY: PEPTIDE
232 <222> LOCATION: (1)..(6)
233 <223> OTHER INFORMATION: Xaa at residues 1 and 2 may be des-Xaa or any
234        amino acid; Xaa at residue 3 is Asp, Glu or
235        gamma-carboxyglutamate; Xaa at residues 5 and 6
236        may be any amino acid.
238 <220> FEATURE:
239 <221> NAME/KEY: PEPTIDE
240 <222> LOCATION: (7)..(16)
241 <223> OTHER INFORMATION: Xaa at residue 7 is Trp or 6-bromo-Trp; Xaa at
```

```
242        residues 9, 10, 13 and 14 may be any amino acid;
243        Xaa at residue 16 is Glu or
·244       gamma-carboxyglutamate.
246 <220> FEATURE:
247 <221> NAME/KEY: PEPTIDE
248 <222> LOCATION: (28)..(34)
249 <223> OTHER INFORMATION: Xaa at residues 28, 30, 31, 32, 33 and 34 may be
250        any amino acid.
252 <400> SEQUENCE: 5
```

W--> 253 Xaa Xaa Xaa Cys Xaa Xaa Xaa Phe Xaa Xaa Cys Thr Xaa Xaa Ser Xaa
```
254    1               5                   10                  15
256 Cys Cys Ser Asn Ser Cys Asp Gln Thr Tyr Cys Xaa Leu Xaa Xaa Xaa
257                20                  25                  30
259 Xaa Xaa
262 <210> SEQ ID NO: 6
263 <211> LENGTH: 32
264 <212> TYPE: PRT
265 <213> ORGANISM: Conus pennaceus
267 <220> FEATURE:
268 <221> NAME/KEY: PEPTIDE
269 <222> LOCATION: (1)..(31)
270 <223> OTHER INFORMATION: Xaa at residue 5 is Trp or 6-bromo-Trp; Xaa at
271        residues 14 and 26 are Glu or
272        gamma-carboxyglutamate; Xaa at residue 31 is Pro
273        or hydroxy-Pro.
275 <400> SEQUENCE: 6
```

W--> 276 Asp Cys Thr Ser Xaa Phe Gly Arg Cys Thr Val Asn Ser Xaa Cys Cys
```
277    1               5                   10                  15
279 Ser Asn Ser Cys Asp Gln Thr Tyr Cys Xaa Leu Tyr Ala Phe Xaa Ser
280                20                  25                  30
283 <210> SEQ ID NO: 7
284 <211> LENGTH: 34
285 <212> TYPE: PRT
286 <213> ORGANISM: Conus textile
288 <220> FEATURE:
289 <221> NAME/KEY: PEPTIDE
290 <222> LOCATION: (1)..(34)
291 <223> OTHER INFORMATION: Xaa at residues 1, 7 and 34 are Trp or
292        6-bromo-Trp; Xaa at residues 3 and 16 are Glu or
293        gamma-carboxyglutamate; Xaa at residues 31 and 32
294        are Pro or hydroxy-Pro.
296 <400> SEQUENCE: 7
```

W--> 297 Xaa Leu Xaa Cys Ser Val Xaa Phe Ser His Cys Thr Lys Asp Ser Xaa
```
298    1               5                   10                  15
300 Cys Cys Ser Asn Ser Cys Asp Gln Thr Tyr Cys Thr Leu Met Xaa Xaa
301                20                  25                  30
303 Asp Xaa
306 <210> SEQ ID NO: 8
307 <211> LENGTH: 39
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RAW SEQUENCE LISTING ERROR SUMMARY   DATE: 12/28/2004
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Input Set : A:\269.revseqlist.txt
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Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; Xaa Pos. 1,2,3,4,5,6,8,9,10,11,12,13,15,16,17,18,19,22,23,24,25,27
Seq#:1; Xaa Pos. 28,29,30,31,32,34,35,36,37,38,39,40,41,42
Seq#:2; Xaa Pos. 1,2,3,4,5,6,8,9,10,11,12,13,15,16,17,18,19,22,23,24,25,27
Seq#:2; Xaa Pos. 28,29,30,31,32,34,35,36,37,38,39,40,41,42
Seq#:3; Xaa Pos. 1,2,3,4,5,6,8,9,10,11,12,13,15,16,17,18,19,27,28,29,31,32
Seq#:3; Xaa Pos. 33,34,35,36,37,38,39
Seq#:4; Xaa Pos. 1,2,3,4,5,6,8,9,10,11,12,13,15,16,17,18,19,27,28,29,31,32
Seq#:4; Xaa Pos. 33,34,35,36,37,38,39
Seq#:5; Xaa Pos. 1,2,3,5,6,7,9,10,13,14,16,28,30,31,32,33,34
Seq#:6; Xaa Pos. 5,14,26,31
Seq#:7; Xaa Pos. 1,3,7,16,31,32,34
Seq#:8; Xaa Pos. 1,2,4,10,19,31,34,36,37,39
Seq#:9; Xaa Pos. 9,13,17
Seq#:10; Xaa Pos. 2,3,10,12,18,26,32,33
Seq#:11; Xaa Pos. 3,5,16,18,22,25,31
Seq#:12; Xaa Pos. 1,5,8,11
Seq#:13; Xaa Pos. 5,8,10,15,16,23
Seq#:14; Xaa Pos. 4,9,12,13,17
Seq#:15; Xaa Pos. 8,15,16
Seq#:24; N Pos. 17
Seq#:36; Xaa Pos. 3,7,8,14,18
Seq#:37; Xaa Pos. 1
Seq#:39; N Pos. 12
Seq#:41; N Pos. 6,9,12,15,18,21,24
Seq#:42; Xaa Pos. 14,26,31
Seq#:43; Xaa Pos. 9,13
Seq#:44; Xaa Pos. 2
Seq#:45; Xaa Pos. 1,6,7,8,12,17,18,23

VERIFICATION SUMMARY   DATE: 12/28/2004
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```
L:75 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
M:341 Repeated in SeqNo=1
L:127 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
M:341 Repeated in SeqNo=2
L:169 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:3 after pos.:0
M:341 Repeated in SeqNo=3
L:211 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:0
M:341 Repeated in SeqNo=4
L:253 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:5 after pos.:0
M:341 Repeated in SeqNo=5
L:276 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:0
M:341 Repeated in SeqNo=6
L:297 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:0
M:341 Repeated in SeqNo=7
L:320 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0
M:341 Repeated in SeqNo=8
L:342 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:0
M:341 Repeated in SeqNo=9
L:363 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0
M:341 Repeated in SeqNo=10
L:386 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0
M:341 Repeated in SeqNo=11
L:406 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12 after pos.:0
L:427 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13 after pos.:0
M:341 Repeated in SeqNo=13
L:447 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14 after pos.:0
M:341 Repeated in SeqNo=14
L:467 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15 after pos.:0
L:733 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:0
L:1090 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36 after pos.:0
M:341 Repeated in SeqNo=36
L:1112 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37 after pos.:0
L:1145 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:39 after pos.:0
L:1179 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41 after pos.:0
L:1195 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:42 after pos.:0
M:341 Repeated in SeqNo=42
L:1214 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:43 after pos.:0
L:1232 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44 after pos.:0
L:1249 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45 after pos.:0
M:341 Repeated in SeqNo=45
```